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EXAMINER

TRAN, NGHI V

ART UNIT	PAPER NUMBER
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2151

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/904,864

Applicant(s)

NISHIO ET AL.

Examiner

Nghi V Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 7, 10-11, 13-27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takaya, JP 11-065791, in view of Suzuki, U.S. Patent No. 6,549,947.

3. With respect to claim 1, Takaya teaches a communication apparatus connected to a network (fig.1), capable of transmitting and receiving an electronic mail, comprising:

- memory means (19 i.e. print data buffer) for storing received data; and
- control means (12 and see solution i.e. "data to be printed are transferred to another printing processor in which the capacity of loading memory is larger" when the printing processing is unavailable due to the shortage of the capacity "memory overflow").

However, Takaya is silent on the communication apparatus is disconnected from a communication path to the transmission and data received and stored in the memory means is processed when the memory means reaches a memory overflow condition during data reception from a transmission side; and the transmission side is

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automatically called for the communication apparatus to restart the data reception when the memory means recovers from the memory overflow condition and a free area is formed in the memory means.

In a communication apparatus, Suzuki discloses when the memory means reaches a memory overflow (i.e. buffer-full data) condition during data reception from a transmission side, the communication apparatus is disconnected from a communication path to the transmission and data received and stored in the memory means is processed (col.17, lns.35-44 i.e. "suspends transmission" is interpreted as disconnected from a communication path), and when the memory means recovers from the memory overflow condition and a free area is formed in the memory means, the transmission side is automatically called for the communication apparatus to restart the data reception (col.17, lns.45-48 i.e. "resumes transmission" is interpreted as automatically restart).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by disconnecting from a communication path during the memory overflow and automatically restart the data reception after the memory overflow condition recovers because these features increase the transmission quality and reduce burden on the communication apparatus. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduces end-to-end delay of a fast data stream with constrained memory.

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4. With respect to claim 2, Takaya is silent on notifying means for, when the memory means reaches the memory overflow condition, notifying a user of the memory overflow condition by a voice message or a display, so as to make recovery of the memory means from the memory overflow condition.

In a communication apparatus, Suzuki discloses notifying means (9 i.e. error or warning display on the display (11)) for, when the memory means reaches the memory overflow condition, notifying a user (col.2, Ins.6-8) of the memory overflow condition by a voice message or a display, so as to make recovery of the memory means from the memory overflow condition (col.1, ln.46 - col.2, ln.27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by adding notifying means because this feature enables the users to view errors (i.e. continue, suspend, or resume transmission of subsequent data). It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to inform the user of the status of error.

5. With respect to claim 3, Takaya is silent on when the memory means reaches the memory overflow condition and the communication apparatus is disconnected from the communication path, a delete signal for erasing the relevant data stored in the transmission side is not sent.

In a communication apparatus, Suzuki discloses when the memory means reaches the memory overflow condition and the communication apparatus is

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disconnected from the communication path, a delete signal for erasing the relevant data stored in the transmission side is not sent (col.3, Ins.9-50 "resumes transmission of the subsequence data transmission command" is interpreted as a delete signal is not sent because the data transmission means continues transmitting the following (i.e. subsequence) data).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by not sending out a delete signal from the communication apparatus because this feature increases the transmission quality without re-transmitting a whole document with constrained memory. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to save bandwidth and time without transmitting a whole document with constrained memory.

6. With respect to claim 4, Takaya is silent on when data is not provided as a result of a request of data, recalling is repeatedly performed with predetermined timing.

In a communication apparatus, Suzuki discloses when data is not provided as a result of a request of data, recalling is repeatedly performed with predetermined timing (fig.8 and col.8, ln.58 - col.9, ln.25 i.e. status request send from host to printer at regular time intervals).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by repeatedly recalling a result of a request of data with predetermined timing because this feature

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arises a necessity for error or problem in timely matter. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to detect error as soon as possible.

7. With respect to claim 11, Takaya further teaches the communication apparatus embodied as a facsimile machine (paragraph 0001, in "detailed description", pg.4).

8. With respect to claim 7, Takaya teaches a communication apparatus connected to a network, capable of transmitting and receiving an electronic mail, comprising:

- memory means (19 i.e. print data buffer) for storing received data;
- printing means (1 or 2) for printing the received data on a recording sheet (paragraph 0008, in "means", pg.11); and
- control means (12 and see solution i.e. "data to be printed are transferred to another printing processor in which the capacity of loading memory is larger" when the printing processing is unavailable due to the shortage of the capacity "memory overflow").

However, Takaya is silent on when the memory means reaches a memory overflow condition during data reception, the data reception is interrupted and a data portion printed on a recording sheet by the printing means among data stored in the memory means by the data reception is stored, and when data reception is restarted, the data stored in the memory means by the data reception is compared with data

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already stored in the memory means, and data except for the data portion already printed on the recording sheet is printed on a recording sheet by the printing means.

In a communication apparatus, Suzuki discloses when the memory means reaches a memory overflow condition during data reception, the data reception is interrupted (i.e. the receiving buffer is full) and a data portion printed on a recording sheet by the printing means among data stored in the memory means by the data reception is stored (Suzuki, col.6, Ins.48-60 and col.3, Ins.9-15), and when data reception is restarted, the data stored in the memory means by the data reception is compared (Suzuki, col.3, Ins.51-63 i.e. "compared" is inherent as "printing of a certain page can be resume by way of re-transmission of the print data") with data already stored in the memory means, and data except for the data portion already printed on the recording sheet is printed on a recording sheet by the printing means (Suzuki, col.3, Ins.20-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by comparing with data already stored in the memory means and data except for the data portion already printed on the recording sheet in memory overflow condition because this feature increases the transmission quality and avoids duplicate data. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduce end-to-end delay of a fast data stream with constrained memory.

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9. With respect to claim 10, Takaya is silent on the control means controls so that when the memory overflow condition of the memory means is caused during the data reception, the data reception is interrupted, and when the memory means recovers from the memory overflow condition, data reception is restarted.

In a communication apparatus, Suzuki discloses the control means controls so that when the memory overflow condition of the memory means is caused during the data reception, the data reception is interrupted, and when the memory means recovers from the memory overflow condition, data reception is restarted (Suzuki, col.3, Ins.8-23 "data reception is restarted" is interpreted as "resumes transmission").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by restarting data after the memory means recovers from the memory overflow condition because these features increase the transmission quality and reduce burden on the communication apparatus without transmitting a whole document from beginning. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduces end-to-end delay of a fast data stream with constrained memory.

10. With respect to claim 13, Takaya further teaches the communication apparatus embodied as a facsimile machine (paragraph 0001, in "detailed description", pg.4).

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11. With respect to claim 14, Takaya teaches a communication apparatus (1 or 2) that selectively retrieves data from a server (3), the communication apparatus comprising:

- a communication circuit (11);
- a memory (Takaya, paragraph 0008, in “means”, pg.11, i.e. the capacity of loading memory) that stores the data retrieved from the server (3 i.e. “the server” is inherent as “personal computer” because the function of PC is capable to perform the same function of the server); and
- control means (12 and see solution i.e. “data to be printed are transferred to another printing processor in which the capacity of loading memory is larger” when the printing processing is unavailable due to the shortage of the capacity “memory overflow”).

However, Takaya is silent on a controller for controlling the communication circuit to attempt to connect to the server and, if a connection is made, for retrieving the data, wherein, when the controller detects a memory overflow condition during the retrieving of the data, the connection to the server is broken such that the data is retained by the server and, when the controller detects that the memory overflow condition is resolved, the controller automatically attempts to re-connect to the server and, if a connection is made, retrieves the data.

In a communication apparatus, Suzuki discloses a controller (i.e. the data transmission means) for controlling the communication circuit to attempt to connect to the server (fig.2-3 i.e. “attempt to connect to the server” is interpreted as reply from

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printer to host because printer (i.e. communication circuit) connects to host (i.e. server)) and, if a connection is made, for retrieving the data (fig.1), wherein, when the controller detects a memory overflow condition (i.e. buffer is full) during the retrieving of the data, the connection to the server is broken (i.e. suspends transmission) such that the data is retained by the server (col.3, Ins.9-19) and, when the controller detects that the memory overflow condition is resolved, the controller automatically attempts to re-connect (i.e. resumes transmission) to the server and, if a connection is made, retrieves the data (col.3, Ins.19-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by broken from a communication path during the memory overflow and automatically attempts to reconnect to the server because these features increase the transmission quality and reduce burden on the communication apparatus. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduces end-to-end delay of a fast data stream with constrained memory.

12. With respect to claim 15, Takaya further teaches the controller controls the communication circuit to attempt to connect to the server. However, Takaya is silent on attempting to connect to the server in response to user inputs to the communication apparatus. In addition, manually connected to the server (see the prior art made of record below, Lin et al., U.S. Patent No. 5,881,064 i.e. "the user inputs the address data

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(i.e., 222444) of the information server and then dials/accesses the number of the desired report or information (i.e., 0023)") is well know in the art.

13. With respect to claim 16, Takaya is silent on the controller controls the communication circuit to attempt to connect to the server automatically.

In a communication apparatus, Suzuki discloses the controller controls the communication circuit to attempt to connect to the server automatically (figs.2-3; and col.3, lns.34-39 i.e. "connect to the server automatically" is inherent as reply message from printer to host because printer (i.e. communication circuit) automatically connects to host (i.e. server) without any user's input).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by automatically connect to the server because this feature provides a smooth transmission in a timely matter. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduces end-to-end delay of a fast data stream with constrained memory.

14. With respect to claim 17, Takaya is silent on the communication apparatus sends a delete signal to server for deleting the data after the data is retrieved.

In a communication apparatus, Suzuki discloses the communication apparatus sends a delete signal (i.e. the page print completion report) to server for deleting (i.e. discarding) the data after the data is retrieved (col.3, ln.65 - col.4, ln.4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by sending a delete signal to server after data is retrieved because this feature saves memory. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to be retained to a current page.

15. With respect to claim 18, Takaya is silent on the controller automatically re-attempts to connect the server one or more times if a connection is not made.

In a communication apparatus, Suzuki discloses the controller automatically re-attempts to connect (i.e. "returned the status requested" is inherent as "attempts to connect) the server one or more times (i.e. repeatedly) if a connection is not made (i.e. a full state is not clear) (col.3, Ins.13-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by sending a delete signal to server after data is retrieved because this feature saves memory. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to be retained to a current page.

16. With respect to claim 19, Takaya further teaches the communication apparatus embodied as a facsimile machine (Takaya, paragraph 0001, in "detailed description", pg.4).

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17. With respect to claim 20, Takaya further teaches the communication apparatus embodied as a multimedia communication apparatus (Takaya, paragraph 0001, in “detailed description”, pg.4 i.e. “multimedia communication apparatus” is interpreted as “a combinations of printer, facsimile, a copying machine, etc. while connecting on a network” which “relating to the combined use of several media”).

18. With respect to claim 21, Takaya further teaches the communication apparatus embodied as the retrieved data comprises electronic mail (Takaya, paragraph 0008, in “means”, pg.12).

19. With respect to claim 22, Takaya is silent on the controller detects the memory overflow condition based at least in part on whether or not a printer can print the retrieved data.

In a communication apparatus, Suzuki discloses the controller detects the memory overflow condition (col.3, Ins.8-23) based at least in part on whether or not a printer can print the retrieved data.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by detecting of the memory overflow condition because this feature increase the transmission quality and reduce burden on the communication apparatus. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify

Takaya in view of Suzuki in order to reduces end-to-end delay of a fast data stream with constrained memory.

20. With respect to claim 23, Takaya teaches a communication apparatus that selectively retrieves data from a server, the communication apparatus comprising:

- a communication circuit (11);
- a memory (Takaya, paragraph 0008, in “means”, pg.11, i.e. the capacity of loading memory) that stores the data retrieved from the server (3 i.e. “the server” is inherent as “personal computer” because the function of PC is capable to perform the same function of the server); and
- a printer (1 or 2) for printing the retrieved data.
- a controller (12 and see solution i.e. “data to be printed are transferred to another printing processor in which the capacity of loading memory is larger” when the printing processing is unavailable due to the shortage of the capacity “memory overflow”).

However, Takaya is silent on printing a page-by-page basis and the communication circuit to attempt to connect to the server and, if a connection is made, for retrieving the data, wherein, when a memory overflow condition is detected during the retrieving of the data, the connection is broken such that the data is retained by the server and, when the controller detects that the memory overflow condition is resolved, the controller automatically attempts to re-connect to the server and if a connection is

made, retrieves the data and controls the printer to print only pages not previously printed.

In a communication apparatus, Suzuki discloses on a page-by-page basis (col.3, Ins.24-27); and the communication circuit to attempt to connect to the server (fig.2-3 i.e. "attempt to connect to the server" is interpreted as reply from printer to host because printer (i.e. communication circuit) connects to host (i.e. server)) and, if a connection is made, for retrieving the data, wherein, when a memory overflow condition (i.e. buffer is full) is detected during the retrieving of the data, the connection is broken (i.e. suspends transmission) such that the data is retained by the server (col.3, Ins.9-19) and, when the controller detects that the memory overflow condition is resolved, the controller automatically attempts to re-connect (i.e. resumes transmission) to the server and if a connection is made, retrieves the data (col.3, Ins.19-21) and controls the printer to print only pages not previously printed (col.3, Ins.54-57 i.e. "print only pages, not previously printed" is inherent as "retains the print data pertaining to a page that has already been transmitted to the printer").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by broken from a communication path during the memory overflow and automatically attempts to reconnect to the server because these features increase the transmission quality and reduce burden on the communication apparatus. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify

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Takaya in view of Suzuki in order to reduces end-to-end delay of a fast data stream with constrained memory.

21. With respect to claim 24, Takaya is silent on the data retrieved from the server and printed prior to the breaking of the connection is stored in the memory and marked to permit the controller to determine which pages have been previously printed.

In a communication apparatus, Suzuki discloses the data retrieved from the server and printed prior to the breaking of the connection is stored in the memory (23; col.1, Ins.49-55) and marked to permit the controller to determine which pages have been previously printed (col.3, Ins.54-57 i.e. "print only pages, not previously printed" is inherent as "retains the print data pertaining to a page that has already been transmitted to the printer").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by marking which pages have been previously printed because this feature keeps track printer status without any error in the memory. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduces end-to-end delay of a fast data stream with constrained memory.

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22. With respect to claim 25, Takaya further teaches the communication apparatus embodied as a facsimile machine (Takaya, paragraph 0001, in "detailed description", pg.4).

23. With respect to claim 26, Takaya further teaches the communication apparatus embodied as a multimedia communication apparatus (Takaya, paragraph 0001, in "detailed description", pg.4 i.e. "multimedia communication apparatus" is interpreted as "a combinations of printer, facsimile, a copying machine, etc. while connecting on a network" which "relating to the combined use of several media").

24. With respect to claim 27, Takaya further teaches the communication apparatus embodied as the retrieved data comprises electronic mail (Takaya, paragraph 0008, in "means", pg.12).

25. With respect to claim 29, Takaya is silent on the detecting of the memory overflow condition is based at least in part on whether or not the printer can print the retrieved data.

In a communication apparatus, Suzuki discloses the detecting of the memory overflow condition (col.3, Ins.8-23) is based at least in part on whether or not the printer can print the retrieved data.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by detecting of the

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memory overflow condition because this feature increase the transmission quality and reduce burden on the communication apparatus. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduces end-to-end delay of a fast data stream with constrained memory.

26. Claims 5-6, 8-9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takaya, JP 11-065791, in view of Suzuki, U.S. Patent No. 6,549,947, and further in view of Kadota et al., U.S. Patent Application Publication No. 2001/0043723 (hereinafter Kadota).

27. With respect to claim 5, Takaya teaches a communication apparatus connected to a network (fig.1), capable of transmitting and receiving an electronic mail, comprising:

- memory means (19 i.e. print data buffer) for storing received data;
- printing means (1 or 2) for printing the received data on a recording sheet (paragraph 0008, in "means", pg.11); and
- control means 12 and see solution i.e. "data to be printed are transferred to another printing processor in which the capacity of loading memory is larger" when the printing processing is unavailable due to the shortage of the capacity "memory overflow").

In addition, Suzuki teaches when the memory means reaches a memory overflow (i.e. buffer is full) condition during data reception, the data reception is

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interrupted (Suzuki, col.17, Ins.35-44 i.e. "suspends transmission" is interpreted as interrupted or error), and when data reception is restarted, received data is stored in the memory means, and the stored data in the memory means is read out to print on a recording sheet by the printing means (Suzuki, col.17, Ins.45-48 i.e. "resumes transmission" is interpreted as automatically restart).

However, both Takaya and Suzuki are silent on the data stored in the memory means is erased in cases where the data stored in the memory means is not printed on a recording sheet.

In a communication apparatus, Kadota discloses the data stored in the memory means is erased in cases where the data stored in the memory means is not printed on a recording sheet (Kadota, paragraph 0115, page 7 i.e. "the reception data is cleared to ease incomplete data").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki, and further in view of Kadota by erasing the data stored in the memory means which is not printed on a recording sheet because this feature avoids duplication or incomplete data. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduce end-to-end error.

28. With respect to claims 6 and 8-9, Takaya is silent on the control means controls so that, when the data reception is interrupted, and the data stored in the memory means by the data reception is printed on the recording sheet, a data portion printed on

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a recording sheet by the printing means is stored in the memory, and when data reception is restarted, the data stored in the memory means by the data reception is compared with data already stored in the memory means and data except for the data portion already printed on the recording sheet on the recording sheet is printed on a recording sheet.

In a communication apparatus, Suzuki further teaches the control means controls so that, when the data reception is interrupted (i.e. the receiving buffer is full), and the data stored in the memory means by the data reception is printed on the recording sheet, a data portion printed on a recording sheet by the printing means is stored in the memory (Suzuki, col.6, Ins.48-60), and when data reception is restarted, the data stored in the memory means by the data reception is compared (Suzuki, col.3, Ins.51-63 i.e. "compared" is inherent as "printing of a certain page can be resume by way of re-transmission of the print data") with data already stored in the memory means and data except for the data portion already printed on the recording sheet on the recording sheet is printed on a recording sheet (Suzuki, col.3, Ins.20-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki by comparing with data already stored in the memory means and data except for the data portion already printed on the recording sheet in memory overflow condition because this feature increases the transmission quality and avoids duplicate data. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to

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modify Takaya in view of Suzuki in order to reduce end-to-end delay of a fast data stream with constrained memory.

29. With respect to claim 12, Takaya further teaches the communication apparatus embodied as a facsimile machine (Takaya, paragraph 0001, in "detailed description", pg.4).

30. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takaya, JP 11-065791, in view of Suzuki, U.S. Patent No. 6,549,947, as applied to claim 23 above, and further in view of Kadota et al., U.S. Patent Application Publication No. 2001/0043723 (hereinafter Kadota).

31. With respect to claim 28, both Takaya and Suzuki are silent on the retrieved data which is stored in the memory and not printed prior to the breaking of the connection is erased.

In a communication apparatus, Kadota discloses the retrieved data which is stored in the memory and not printed prior to the breaking of the connection is erased (Kadota, paragraph 0115, page 7 i.e. "the reception data is cleared to ease incomplete data").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takaya in view of Suzuki, and further in view of Kadota by erasing the data stored in the memory means which is not printed on a

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recording sheet before the breaking of the connection because this feature avoids duplication or incomplete data. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Takaya in view of Suzuki in order to reduce end-to-end error.

Response to Arguments

32. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. "Packet-switched data network and method of operation," by Lin et al., U.S. Patent No. 5,881,064.

b. "Facsimile apparatus and communication method thereof," by Matsumoto et al., U.S. Patent No. 6,008,908.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi V Tran whose telephone number is (571) 272-4067. The examiner can normally be reached on Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571) 272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Patent Examiner
Art Unit 2151

NT


ZARNI MAUNG
SUPERVISORY PATENT EXAMINER